

This module of the *Brain Power! Challenge* program discusses nicotine and alcohol. Because these drugs are legal for adults, are easily accessible, and are so widely used, many people think that they are less harmful than the other drugs covered in this program. They do not realize that misuse of these substances can seriously damage the brain and body.

Through the media, children are exposed to a great deal of information about nicotine and alcohol. The purpose of this module is to help students understand that, although nicotine and alcohol are legal for adults, they are not harmless.

Summary

Nicotine

Nicotine is a stimulant drug found in cigarettes, cigars, pipe tobacco, and smokeless tobacco. It is just as addictive as heroin and cocaine. Nicotine's effects include increased heart rate and blood pressure, increased alertness, and reduced appetite. Nicotine is a very addictive drug, but it is actually the tobacco in nicotine products that is harmful and can cause cancer and death. Smoking and chewing tobacco can cause cancer of the lungs, throat, and mouth.

Nicotine has many effects in the brain. Specifically, nicotine acts on two neurotransmitters, acetylcholine and dopamine.

Acetylcholine	Acetylcholine carries messages involved with respiration, heart rate, memory, alertness, and muscle movement. Nicotine affects the role of acetylcholine and increases the rate of these messages.
Dopamine	Dopamine is responsible for carrying messages about pleasurable feelings. It is nicotine's effects on dopamine that are partially responsible for nicotine addiction.

Alcohol

Alcohol is a drug found in beer, wine, and hard liquors such as gin, vodka, and whiskey. It affects many brain areas and can cause memory loss, impaired motor coordination, impaired thinking and problem solving, changes in emotional behavior, and, in some cases, death. Moderate consumption of alcohol is not harmful for adults, but use of alcohol can have a negative impact on children because their brains are still developing.

Alcohol affects many areas of the brain. One specific neurotransmitter that is affected by alcohol use is GABA.

GABA	Alcohol use increases the amount of GABA in the brain, which, in turn, decreases brain activity. This decreased activity may cause decreased attention, memory alterations, mood changes, and drowsiness.
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Because alcohol and certain other drugs work in the same areas of the brain, using both these substances greatly intensifies the effects of both drugs. This can be very dangerous to the brain and body.

During this module, your child learned about two drugs that are legal for adults: nicotine and alcohol. Until today, he or she may not even have considered either of these substances a drug. It is important to continue the discussion at home. Even if you drink or smoke, it is important to discuss these decisions with your child. Both drugs are much more harmful for children than adults. Talk to your child about what he or she has learned in this module. Ask your child to describe the effects of these drugs. Discuss how these drugs affect the process of neurotransmission. Use your child's comments as a jumping-off point for more conversation.

Resources

National Institute on Drug Abuse (NIDA)

www.drugabuse.gov, 301-443-1124

This Web site contains information about drug abuse as well as a section designed specifically for parents, teachers, and students.

National Clearinghouse for Alcohol and Drug Information (NCADI)

<http://ncadi.samhsa.gov>, 1-800-729-6686

NCADI is the world's largest resource for information and materials concerning substance abuse. Many free publications are available here.

Parents: The Anti-Drug

www.theantidrug.com

This site is designed for parents and covers the risks and consequences of various drugs, and provides news, advice, and real-life stories.

National Institute on Alcohol Abuse and Alcoholism

www.niaaa.nih.gov

A useful tool for parents, this site details the latest research, and provides information, publications, and news releases on alcohol use and abuse.

***Buzzed: The Straight Facts About the Most Used and Abused Drugs from Alcohol to Ecstasy.* Kuhn, C., Swartzwelder, S. and Wilson, W.** New York: W. W. Norton & Company, 2003. A highly informative, detailed review of widely abused drugs.

***Alcohol.* Wagner, H.L.** Part of the *"Drugs: The Straight Facts"* series. Philadelphia, PA: Chelsea House Publishers, 2003. Contains a thorough discussion of alcohol-related issues, including history, health effects, usage trends, and alcoholism.

***Nicotine.* Wagner, H.L.** Part of the *"Drugs: The Straight Facts"* series. Philadelphia, PA: Chelsea House Publishers, 2003. Contains a thorough discussion of nicotine and smoking, including history, health effects, usage trends, and addiction.

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